REMARKS

In the Office Action, claims 1-29 were rejected. By the present Response, claims 1, 4, 11, 14-15, 20, and 24-29 are amended, and claims 3, 8, and 16 are canceled. Upon entry of the amendments, claims 1-2, 4-7, 9-15, and 17-29 will remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Objections to the Specification

In the Office Action, the Examiner objected to the specification under 37 C.F.R. § 1.75(a) and (d)(1) as failing to particularly point out and distinctly claim the subject matter which Applicant regards as his invention or discovery, and failing to conform to the invention as set forth in the remainder of the specification. Particularly, the Examiner objected to the non-linear function stated in claims 8 and 16 which was not fully disclosed in the specification. Applicant has canceled claims 8 and 16. The Examiner also pointed to an inconsistency between thresholds which was found between page 9 of the specification and claims 3 and 4. Claim 3 has been canceled, and claim 4 has been amended to correct this inconsistency. In view of the foregoing cancellations and amendment, Applicant respectfully requests the Examiner withdraw the objections to the specification.

Objections to the Claims

The Examiner objected to claims 3, 4, and 14-16. Specifically, claims 3 and 4 are objected to under 37 C.F.R. § 1.75(a) and (d)(1) as failing to particularly point out and distinctly claim the subject matter which Applicant regards as his invention or discovery, and failing to conform to the invention as set forth in the remainder of the specification. Claim 3 has been canceled, and claim 4 has been amended to correct an inconsistency in the structure and non-structure thresholds to more accurately set forth certain of the subject matter in which Applicant regards as the invention. Though the Examiner did not state that the inconsistency also involved claims 11, 25, and 27, these claims have also

been amended to correct the inconsistency. The Examiner also objected to claims 14-16 because they should depend from claim 12 for proper antecedent support. Applicant has amended claims 14-15 to depend from claim 12 and has canceled claim 16. In view of the foregoing cancellations and amendments, Applicant respectfully requests the Examiner withdraw the objections to the claims.

Rejections Under 35 U.S.C. § 101

In the Office Action, the Examiner rejected claims 26-29 under 35 U.S.C. § 101 as directed to non-statutory subject matter. Specifically, the Examiner asserted that claims 26 and 27 claimed a computer program which is abstract and non-statutory and that claims 28 and 29 claimed an image which is non-statutory. Although Applicant does not necessarily agree with the Examiner's rejections, Applicant has amended claims 26 and 27 to adopt the language recommended by the Examiner, and claims 28 and 29 to claim a computer memory device storing an image. In view of the foregoing amendments, Applicant respectfully requests that the Examiner withdraw the Section 101 rejections of claims 26-29.

Rejections Under 35 U.S.C. § 112

The Examiner rejected claims 8 and 16 under both the first and second paragraphs of 35 U.S.C. § 112 as failing to comply with the enablement requirement and as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Although Applicant does not necessarily agree with the Examiner's rejections, Applicant has canceled claims 8 and 16.

Rejections Under 35 U.S.C. § 102

The Examiner rejected claims 1-7, 9-15, and 17-29 under 35 U.S.C. §102(e) as being anticipated by U.S. Publication 2002/0093686 to Fan et al. (hereinafter "Fan"). A *prima facie* case of anticipation under 35 U.S.C. § 102 requires a showing that each limitation of a claim is found in a single reference, practice or device. *In re Donohue*,

226 U.S.P.Q. 619, 621 (Fed. Cir. 1985). Of the rejected claims, claims 1, 11, 20, and 24-27 are independent claims and have been amended. As amended, claims 1, 11, 20, and 24-27 and their dependent claims are believed to distinguish over the Fan reference. Based on the noted amendments and at least the reasons set forth below, the Applicants respectfully traverse the present rejection and request reconsideration by the Examiner.

Rejection of Claims 1, 24, and 26 and the Claims Depending Therefrom

The Examiner stated that Fan discloses all of the elements of claims 1, 24, and 26. The analysis advanced by the Examiner is not supported by the reference. Claims 1, 24, and 26 have been amended to further differentiate between the present claims and Fan. Fan does not disclose at least one feature of currently amended claims 1, 24, and 26, and therefore cannot support a *prima facie* case of anticipation.

Claims 1, 24, and 26 recite, respectively, a method, a system, and a computer storage medium storing a computer program for processing image data. All three claims recite "identifying a first group of pixels exhibiting a first characteristic" and "identifying a second group of pixels exhibiting a second characteristic." The first and second characteristics are further defined within the claims as corresponding to structures and non-structures in the image data. Structure and non-structure or an overlap of the two are the characteristics by which the first, second, and third pixel groups are identified, and it is the identifying and processing of these pixel groups and the blending of their processed values that is set out in claims 1, 24, and 26. *See* Application, page 9, lines 2-12.

Fan discloses a method for descreening a halftoned image by inputting pixel values from a small neighborhood of pixels within the image and low-pass filtering and notch filtering the input pixel values using local contrast value as the filter variable. *See* Fan, page 2, para. 26. The low pass filter value and the notch filter value are combined to produce an output pixel value. *See Id.* The output pixel value then determines the contrast value of that region of the image. *See* Fan, page 1, para. 8.

The Examiner relied upon Paragraph 26 of Fan to reject claim 1, 24, and 26. However, nowhere in this paragraph or in the entire publication does Fan disclose characterization of pixel groups by structures and non-structures. Rather, the image in Fan is descreened on a pixel-by-pixel basis, and pixels are passed through a low-pass filter and a notch filter to determine the contrast value of each small neighborhood of pixels. *See* Fan, page 2, para. 20 and 26. Such filtering of small neighborhoods of pixels to determine contrast value is different from grouping of pixels in terms of characteristics corresponding to structures and non-structures. Where Fan determines the contrast values of each small neighborhood of pixels with no relationship to the image as a whole, the present claims identify characteristics corresponding to structures and non-structures, which involve identifying structural regions in the entire image as a whole. Such regional identification is important to the present invention for many reasons, one of which being connectedness of the image. *See* Application, page 10, lines 7-11. For example, "when connectedness is used as a criterion, small islands of non-structures in structures are treated as structures and small islands of structures in non-structures are treated as non-structures." *See* Application, page 10, lines 9-11. So in some applications, while a certain group of pixels may exhibit some qualities which would identify them as a non-structure, that group of pixels may still be processed as structure if it is identified as more likely being a structure. This regional identification and analysis is possible because structure and non-structure identification may include "recognizing intensity levels and variations that probabilistically represent edges, meaningful surfaces and regions, and so forth." *See* Application, page 8, lines 24-25. Such classifications can not be achieved in Fan.

Rejection of Claim 20 and the Claims Depending Therefrom

The Examiner argued that Fan discloses all of the elements of claim 20. Claim 20 has been amended to further differentiate between aspects of the present invention and

Fan. Fan does not disclose at least one essential feature of currently amended claim 20, and therefore cannot support a *prima facie* case of anticipation.

Claim 20 covers a system for processing image data that includes separating pixel data into groups corresponding to structures, non-structures, and a combination of structures and non-structures. The Examiner rejected claim 20 based on the same paragraph 26 which was relied upon in the rejection of claims 1, 24, and 26. For at least the reasons set forth in the remarks regarding the rejection of claims 1, 24, and 26 the analysis advanced by the Examiner is not supported by the reference.

Rejection of Claims 11, 25, and 27 and the Claims Depending Therefrom

The Examiner argued that Fan discloses all of the elements of claims 11, 25, and 27. The analysis advanced by the Examiner is not supported by the reference. Claims 11, 25, and 27 have also been amended to further differentiate between aspects of the present invention and Fan. Fan does not disclose at least one feature of currently amended claims 11, 25, and 27, and therefore cannot support a *prima facie* case of anticipation.

Claims 11, 25, and 27 recite, respectively, a method, a system, and a computer storage medium storing a computer program for processing image data. All three claims recite "identifying a first group of pixels having a value falling above the first threshold" and "identifying a second group of pixels having a value falling below the second threshold." The first and second thresholds are further defined within the claims as corresponding to structures and non-structures in the image data. The thresholds determining structure and non-structure or an overlap of the two identify the first, second, and third pixel groups, and it is the identifying and processing of these pixel groups and the blending of the processed values that are the focus of claims 11, 25, and 27. *See* Application, page 9, lines 23-28.

As discussed in the preceding remarks regarding rejection of claims 1, 24, and 26, Fan does not disclose the structure and non-structure identification which is also recited in claims 11, 25, and 27. For at least that reason, Fan cannot support a *prima facie* case of anticipation. Furthermore, as mentioned in the preceding remarks regarding Fan, local contrast is the only variable considered in separating pixel values for linear combination. *See* Fan, page 2, para. 26. Fan does not mention any variables by which to separate pixels into structure and non-structure groups, but discusses only filtering input pixel values to determine the contrast value of each small pixel group. In the recited invention, by contrast, structures and non-structures may be identified, for example by considering more elements than simply contrast value; structure and non-structure identification may include "recognizing intensity levels and variations that probabilistically represent edges, meaningful surfaces and regions, and so forth." *See* Application, page 8, lines 24-25. Though contrast between pixel data might be one element in structure and non-structure differentiation, the analysis may also depend on the "physics of the imaging system, the nature of the data acquired, the dynamic range of the data ... signal-to-noise rations, and so forth." *See* Application, page 8, lines 26-28. More elements may be required in structure and non-structure differentiation, especially in the field of medical imaging. Image segmentation processes adaptable to (but not limited to) medical imaging devices would require different or more elements of analysis than processing of scanned halftoned image representations as in Fan. Fan simply does not distinguish structure from non-structure.

In view of these deficiencies, among others, Fan cannot anticipate independent claims 1, 11, 20, and 24-27 and the claims depending therefrom. Applicants respectfully request withdrawal of the 35 U.S.C. § 102 rejections of independent claims 1, 11, 20, and 24-27 and their dependent claims. Further, Applicants respectfully request an indication of allowance for claims 1, 11, 20, and 24-27 and the claims depending therefrom.

Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 8 and 16 under 35 U.S.C. § 103(a) as being unpatentable over Fan in view of Kang et al. (U.S. Patent No. 7,006,709). Although Applicant does not necessarily agree with the Examiner's rejections, Applicant has canceled claims 8 and 16.

Conclusion

In view of the remarks and amendments set forth above, Applicant respectfully requests allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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